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APPLICANT : TOSOH CORP;

INVENTOR : KUBO TOMIYOSHI;

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TITLE : PRODUCTION OF HIGH-PURITY HIGHLY HEAT RESISTANT SILICA GLASS

ABSTRACT : PURPOSE: To obtain silica glass useful for a furnace core tube, a crucible, a liq. crystal panel, etc., by hydrolyzing a silicon compd. in an oxyhydrogen flame, forming a silica porous body grown in the axial direction of a target and heating it under specified conditions.

CONSTITUTION: A silicon compd. such as purified SiCl_4 or alkyl silicate is used as starting material and this starting material is vaporized and hydrolyzed in an oxyhydrogen flame. The resultant silica powder is deposited on a target and grown in the axial direction to form a high purity silica porous body and transparent silica glass is produced by heating the porous body. At this time, the porous body is heated at $\geq 1,300^\circ\text{C}$ in an atmosphere contg. gaseous CO so that the bulk density is regulated to $\geq 1.5\text{g/cm}^3$ and the objective silica glass having $\leq 10\text{ppm}$ concn. of OH and $\leq 10^{13.0}\text{P}$ viscosity at $1,200^\circ\text{C}$ is obtd. The concn. of each of all metallic impurities in this silica glass is $\leq 50\text{ppb}$.

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